Santa Barbara County
Air Pollution Control District

Permit to Operate 11579

and

Part 70 Permit Modification 11579

EQUIPMENT OWNER:

Venoco, Inc 300500

EQUIPMENT OPERATOR:

Venoco, Inc.

EQUIPMENT LOCATION::

7979 Hollister Avenue; Goleta, CA 93117

STATIONARY SOURCE/FACILITY:

Venoco Ellwood Stationary Source SSID: 01063
Ellwood Onshore Facility FID: 00028

AUTHORIZED MODIFICATION

This permit authorizes operation of the Grace Unit equipment upgrades installed under ATC 11579 and listed in the equipment description below. The addition of new fugitive components results in an increase in the potential to emit of ROC for the facility. There is no change in the potential to emit of any other criteria pollutants.

This permit also corrects the prior component leak path count for the facility, resulting in an increase in permitted fugitive ROC emissions. This correction was necessitated when it was discovered that some pre-existing components were unaccounted for in the facility inventory. This correction is independent of the authorized modification listed above.

EQUIPMENT DESCRIPTION:

The equipment listed in Section 10.5 of PTO 7904-R7 is revised by the addition of the following units:

- Grace Membrane Unit, consisting of four new CO_2 separation tubes added to the existing eight-tube First stage skid and a new two-tube Second stage skid. The modified First stage skid can treat up to 13 MMscf/day of gas and the new Second stage skid can re-process up to 4 MMscf/day of First stage output;
- Fugitive emission components associated with the modifications;
- Existing compressors K-205 and K-206, each rated at 600 hp, are used to re-compress the First stage skid permeate output, and also to compress sales gas, when these are not in permeate service and are needed for sales gas service;
- Polishing/Coalescing Filters F-218/216, Filter Separator F-215 and Guard Bed F-217 which treat the compressed First stage skid permeate output before it is sent to the Second stage separation tubes;
- Stabilizer V-214 is being connected to the in-plant fuel gas header to allow the stabilizer overhead stream to be used as in-plant fuel gas; and,
- Heat Exchanger E-205 (*APCD permit-exempt per Rule 202.L.1.*) with added variable-flow and bypass controls, and used for maintaining a steady inlet gas temperature for the First stage unit.

Refer to the Equipment List section for a complete listing of all Grace Unit equipment (including the new equipment units noted above). In addition, the equipment list contains the corrected fugitive component leak path count for the existing components and the new components installed for the Grace upgrades. Please note that, in an attempt to improve clarity, some devices have been re-named from ATC 11579 and new device numbers have been created for some of the equipment affected by this project.

PROJECT/PROCESS DESCRIPTION:

Plant Process Description: A complete process description of the Ellwood Onshore Facility (EOF) operations may be found in the Part 70/APCD Permit to Operate 7904-R7 (December 2005) in the APCD's administrative files.

Gas Processing Description: EOF's gas processing capability is 13 MMscf/day of dry gas.

Modified Grace Unit Process Details: The Grace Membrane Unit, First stage skid holds 12 membrane tubes (eight old plus four tubes installed under ATC 11579) arranged in three vertical stacks of 4 tubes each. All 12 membrane tubes are piped in parallel, each connected to three main headers: inlet, sales gas and permeate. CO_2 rejection membrane elements in each membrane tube preferentially separate CO_2 from the inlet stream, producing a high pressure low CO_2 concentration sales gas stream, and a low pressure, high CO_2 content permeate stream. The sales gas stream is delivered via pipeline to the Gas Company. The permeate stream is used: (a) to provide heat needed for operating the Process Heater H-204 and the Thermal Oxidizers H-205/206/207; and (b) to serve as 'in-plant fuel gas' in combination with (i) gas from sales gas compressor third-stage suction inlet , and (ii) gas from Stabilizer Overhead and 'buy back PUC- quality natural gas.' Some of the permeate stream is recycled through the second stage skid after re-compression by compressors K-205/206. The Second stage skid holds two new membrane tubes arranged in a vertical stack. It receives First stage skid permeate gases, after they are re-compressed. Its

major output of high pressure low CO_2 concentration gas is recycled to the first stage skid. A smaller output of low pressure, high CO_2 concentration gas is fed to the Thermal Oxidizers H-205/206/207 via the Flare Relief Scrubber V-221. The membrane tubes at the Grace Unit operate in the nominal pressure range of 900-1000 psig at the inlet and nominal temperature range of 90-150° F at the inlet.

The Grace Unit skids also contain pretreatment sections. Gases coming to the skids are pressed through Polishing Filters F-211/215/216/218 and Guard Beds F-210/ 217 before being passed through the membrane tubes of the skids. The pretreatment sections remove contaminants such as traces of water or oil in the inlet gas that would otherwise degrade the membrane element performance.

A block flow diagram of the modified operations of the Grace Unit is presented in Attachment C.

A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to the EOF:

A.1 **Compliance with Permit Conditions.**

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.
(b) This permit does not convey property rights or exclusive privilege of any sort.
(c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.
(d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
(e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.
(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
  (i) compliance with the permit, or
  (ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.
(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible.

[*Re: 40 CFR Part 70.6.(a)(6), APCD Rules 1303.D.1]*

A.2 **Emergency Provisions.** The permittee shall comply with the requirements of the APCD, Rule 505 (Upset/Breakdown rule) and/or APCD Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the APCD, in writing, a "notice of emergency" within 2 working days of the emergency. The "notice of emergency" shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F.9 [*Re: 40 CFR 70.6(g), APCD Rule 1303.F*]

A.3 **Compliance Plan.**

(a) The permittee shall comply with all federally-enforceable requirements that become applicable during the permit term in a timely manner.
(b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards.
[*Re: APCD Rule 1302.D.2*]

A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;
(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;
(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing.
[*Re: APCD Rule 1303.D.2*]

A.5 **Severability.** The provisions of this Permit to Operate are severable and if any provision of this Permit to Operate is held invalid, the remainder of this Permit to Operate shall not be affected thereby. [*Re: APCD Rules 103 and 1303.D.1*]

A.6 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the APCD. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the APCD rules.

The permittee shall submit an application for renewal of the Part 70 permit not later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [*Re: APCD Rule 1304.D.1*]

A.7 **Payment of Fees.** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses, including expenses associated with implementation of permit conditions incorporated pursuant to Abatement Order 99-6A, for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. [*Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)*, AO 99-6A]

A.8 **Deviation from Permit Requirements.** The permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable federal requirements within 7 days after discovery of the violation, but not later than 180 days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation 2) equipment involved 3) the quantity of excess pollutant emissions if any, and 4) actions taken to

correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505. *Breakdown Conditions,* or Rule 1303.F *Emergency Provisions.* [*Re: APCD Rule 1303.D.1, 40 CFR 70.6(a) (3)*]

A.9 **Federally-enforceable Conditions.** Each federally-enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the APCD-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. [*Re: CAAA, § 502(b)(6), 40 CFR 70.6(b)*]

A.10 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [*Re: APCD Rules 1303.D.1, 1302.D.3, 1303.2.c*]

A.11 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;
(b) The date(s) analyses were performed;
(c) The company or entity that performed the analyses;
(d) The analytical techniques or methods used;
(e) The results of such analyses; and
(f) The operating conditions as existing at the time of sampling or measurement;

The records, as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the APCD upon request.
[*Re: APCD Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)*]

A.12 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-

openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally-enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which causes to reopen exist. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

B Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of APCD Rule 303. [*Re: APCD Rule 301*]

B.2 **Nuisance (Rule 303).** No pollutant emissions from any source at Venoco shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. [*Re: APCD Rule 303*]

C. Equipment Specific Conditions

Federally-enforceable conditions, including emissions and operations limits, monitoring, recordkeeping and reporting are included in this section for each specific group of equipment. This section may also contain other non-generic conditions.

The conditions below replace or supplement conditions in PTO 7904-R7, as specified. The attached Tables 5.1 through 5.2 and 10.2-4 and 10.2-5 supersede those in PTO 7904-R7. All other conditions in PTO 7904-R7 remain in full force and effect.

C.3 **Fugitive Hydrocarbon Emissions Components (Replaces condition 9.C.3 of PTO 7904-R7).** The following permitted equipment is included in this emissions unit category:

APCD ID No.	Venoco Equipment No.	Equipment
		Gas/Light Liquid Service Components and associated leak paths
000297	N/A	Valves: Accessible – *component leak path = 3543*
000310	N/A	Valves: Inaccessible – *component leak path = 4*
009118	N/A	Valves: Unsafe – *component leak path = 6*
000300	N/A	Connections: Accessible – *component leak path = 19460*
000312	N/A	Connections: Inaccessible – *component leak path = 2327*
009120	N/A	Connections: Unsafe – *component leak path = 61*
009122	N/A	Pressure Relief Valves: Accessible – *component leak path = 73*
009123	N/A	Pressure Relief Valves: Inaccessible – *component leak path = 1*
107363	N/A	Pressure Relief Valves: Unsafe – *component leak path = 0*
009121	N/A	Compressor Seals: -- *component leak path = 20*
009125	N/A	Pump Seals: -- *component leak path = 10*
		Oil Service Components and associated leak paths
000298	N/A	Valves: Accessible – *component leak path = 458*
000301	N/A	Connections: Accessible – *component leak path = 2428*
107364	N/A	Connections: Unsafe – *component leak path = 0*
009127	N/A	Pressure Relief Valves: Accessible – *component leak path = 0*
009128	N/A	Pump Seals; -- *component leak path = 7*

(a) Emission Limits: Mass emissions from the gas/light liquid service and oil service components listed above shall not exceed the limits listed in Table 5.1-3 and Table 5.1-4.

(b) Operational Limits: Operation of the equipment listed in this section shall conform to the requirements listed in Sections D and E of APCD Rule 331 and NSPS Subpart KKK. Compliance with these limits shall be assessed through the monitoring, recordkeeping and reporting conditions in this permit. In addition Venoco shall meet the following requirements.

(i) *I&M Program* - The APCD-approved I&M Plan (see Condition 9.C.17) and any subsequent APCD-approved updates for the EOF shall be implemented for the life of the project. The Plan, and any subsequent APCD approved revisions, is incorporated by reference as an enforceable part of this permit.

(ii) *Leak-Path Count* – Component leak path counts shall be conducted using the methodology described in district Policy 6100.061.98. Component leak path counts shall not exceed 25,506 component leak paths in gas/light liquid service by more than five percent, nor shall they exceed 2,893 component leak paths in oil service by more than five percent (totals listed in Table 5.1-1., *Operating Equipment Description)*. This five percent range is to allow for minor

differences due to component leak path counting errors and does not constitute allowable emissions growth due to the addition of new equipment. {*Note: 'de minimis' component-leak-path count is not included in Table 5.1-1.}* .

(iii) *Venting* - All routine venting of hydrocarbons shall be routed to either the VRU compressor, flare header or other APCD-approved control device.

(iv) *VRU Use* - The VRU and gas collection (GC) systems at the EOF shall be in operation when equipment connected to these systems is in use. These systems include piping, valves, and flanges associated with the VRU & GC systems. The VRU & GC systems shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches.

(v) *Emission Reduction Credits* - The emission reductions created by this permit are for the use as offsets by The Point Arguello Companies to meet the requirements under Permit to Operate 5704 (version 27 March 1996 or subsequent updates to that permit). Emission reduction measures implemented to create the required emission reductions shall be in place and maintained for the life of the Gaviota project. This permit does not authorize the dedication of these emission reductions to any other project without prior written approval by the APCD. The APCD will assess any such proposal in accordance with applicable APCD rules and regulations in effect at the time an application is determined to be complete by the APCD.

(vi) *ERC Inspection & Maintenance (I&M) Program* - The permittee shall implement the ERC fugitive hydrocarbon inspection and maintenance program at the EOF. The inspection and maintenance program shall be consistent with APCD Rule 331 (Fugitive Emissions Inspection and Maintenance). However, the permittee shall also comply with other specified recordkeeping and reporting requirements as outlined in the F*ugitive Hydrocarbon Inspection and Maintenance Program Plan* as approved by the APCD and any subsequent APCD-approved updates.

(vii) *Reimbursement of Costs* - All costs reasonably incurred by the APCD, including APCD consultants and Legal Counsel (but not attorney's fees in litigation) related to the implementation and enforcement of the ERC I&M Program shall be reimbursed by Venoco within thirty (30) calendar days of invoicing by the APCD. If, for any reason, the APCD is unable to obtain full reimbursement for all costs incurred, the APCD may revoke or suspend this permit until such a time that a complete application (including the payment of all outstanding invoices) for the reinstatement of the permit is received by the APCD.

(c) Monitoring: The equipment listed in this section are subject to all the monitoring requirements listed in 40 CFR Part 60, Subpart KKK and APCD Rule 331.F. The test methods in Subpart KKK and Rule 331.H shall be used, when applicable. In addition, Venoco shall track the component leak path (clp) counts for all categories of components at the EOF that are listed in the Section C.3 table above; and, log any clp count changes, including de minimis changes, in a component-leak-path inventory maintained for the facility.

(d) Recordkeeping: All inspection and repair records shall be retained at the source for a minimum of five years. The equipment listed in this section are subject to all the recordkeeping requirements listed in 40 CFR Part 60 Subpart KKK and APCD Rule 331.G and the APCD-approved I&M Plan (see Condition 9.C.17) and any subsequent updates. The permittee shall also do the following:

(i) *I&M Log* - Venoco shall record in a log the following:

- a record of leaking components found (including name, location, type of component, date of leak detection, the ppmv or drop-per-minute reading, date of repair attempts, method of detection, date of re-inspection and ppmv or drop-per-minute reading following repair);
- a record of the total components inspected and the total number and percentage found leaking by component type;
- a record of leaks from critical components;
- a record of leaks from components that incur five repair actions within a continuous 12-month period;
- a record of component repair actions-including dates of component re-inspections; and,
- A table showing clearly all changes in the clp counts from the count shown in the Section C.3 Table above, for all categories of components including the de minimis components at the facility.

(ii) Venoco shall also maintain, on a quarterly basis, adequate records to verify that the 141.51 tons/yr ROC emission reductions required under this permit to provide adequate credits to Chevron's Pt. Arguello Project are actually being attained and are in compliance with the APCD Rules and Regulations. These records shall include all information required under the APCD-approved I&M Plan and any subsequent APCD-approved updates.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all data required by the Compliance Verification Reports condition of PTO 7904-R7.
[*Re: ATC 7234, ATC 9323, ATC 10022, 40 CFR 70.6(a)(3), Subpart KKK, APCD Rule 331*]

C.9 **Grace Membrane Unit (Replaces condition 9.C.9. of PTO 7904-R7).** The following equipment is included in this emission category:

APCD ID No.	Venoco Equipment ID No.	Name
009399	Bank A	Permeate Tubes – first stage skid – Bank A
106340	Bank C	Permeate Tubes – first stage skid – Bank C
106099	Bank B	Permeate Tubes – first stage skid – Bank B
111090	Second Stage	Permeate Tubes – second stage skid
009492	F-201	Filter Separator
009398	F-210	Guard Bed
009397	F-211	Polishing Filter
111091	F-215	Filter Separator
106100	F-216	Coalescing Filter
111092	F-217	Guard Bed
111093	F-218	Polishing Filter

(a) Operational Limits: The following operational limits shall apply:

(i) *Process Volumes* - The Grace Membrane Unit shall not treat more than 13 MMscf/day of gases for CO_2 separation. Any volume of gas recycled through the Grace Unit will not count toward this limit. (Re: ATC 10941)

(ii) *Permeate Gas Output* – The combined heat content of "permeate gas" supplied to: (a) Process Heater Unit H-204, plus (b) Relief Header for Relief Scrubber V-221, plus (c) In-plant Fuel Gas Header, shall not exceed 58 MMBtu/hr (Re: ATC 10941).
NOTE: The hourly permeate gas volume flows shall be obtained by adding up (A) flow to H-204 as obtained at FIT-732 , plus (B) flow to V-221 as obtained from readings at FR-567 +FR-563, plus (C) flow to In-plant Fuel Gas Header as obtained from readings at FR-250 (see Block Flow Diagram in Attachment C). The heat content of the total flow shall be computed based on the HHV of weekly samples obtained at FR-564 and FR-563, or other locations approved by the APCD.

(iii) *Compressors K-205/K-206 Operations* – Compressors K-205 and K-206 shall be equipped and operated with a dedicated flow meter (i.e., FR-564), allowing the units to record the volumes of permeate gases processed by the compressors while servicing the Second stage skid.

(iv) *Heater Operation* - If the process heater H-204 is in operation, its total heat input requirement shall be met by the modified Grace Membrane Unit output, to the extent feasible. Only after meeting the full demand of the H-204 unit shall any excess flare gas produced by the Grace Unit be sent to the thermal oxidizer units H-205/206/207. This condition will be enforced through appropriate monitoring and recordkeeping.

(b) Monitoring: Venoco shall monitor the following:

(i) The hourly volume flow rate (in scf/hour) of: (a) gas inflow to the First-stage skid, as recorded by FR-560;

(ii) The hourly volume flow rate (in scf/hour) of: (A) First-stage permeate gas flow into H-204, as recorded by FIT-732, (B) First-stage permeate gas flow to the Relief Header for Relief

Scrubber, as recorded by FR-567, (C) Second-stage permeate gas flow into the relief scrubber, as recorded by FR-563 and (D) first-stage permeate gas flow to In-plant Fuel Gas Header, as recorded by FR-250; and,

(iii) The weekly high heating value of first stage and second stage permeate streams. The high heating value of each stream shall be determined by lab analyses of samples taken at each of the following equipment unit locations: (a) FR-564, and (b) FR-563, or other locations approved by the APCD. Sampling at FR-564 does not need to be conducted if the first stage tubes are not in use during the week. Sampling at FR-563 does not need to be conducted if the second stage tubes are not in use during the week.

(c) Recordkeeping: Data from all monitoring activities listed in Condition 9.C.9.(b) above shall be recorded by Venoco. These records shall be kept for a minimum of five (5) years. All sampling and analysis data/results shall be submitted to the APCD in accordance with Permit Condition (d) below.

Grace Unit Output Heating Value Records – The *weekly* heating value (Btu/scf) lab analysis results for the Grace Unit output shall be compiled. Include copies of the lab's analysis sheets, obtained separately for the gas streams per Condition 9.C.9.(b)(iii); and the computed MMBtu/hr value of the Grace Unit output, based on the weekly high heating value analyses and hourly gas flow volume records.

(d) Reporting: Venoco shall submit the monitoring data recorded per Condition 9.C.9.(c) with each Semi-Annual Compliance Verification Report required per PTO 7904-R7.

[Re: ATC 11579]

D. APCD-Only Conditions

The following section lists permit conditions that are not enforceable by the USEPA or the public. However, these conditions are enforceable by the APCD and the State of California. These conditions are issued pursuant to APCD Rule 206 (*Conditional Approval of Authority to Construct or Permit to Operate)*

D.1 **Permit Activation.** All aspects of this permit are enforceable by the APCD and the State of California upon the issuance date stamped below. The Part 70 aspects of this permit are not final until:

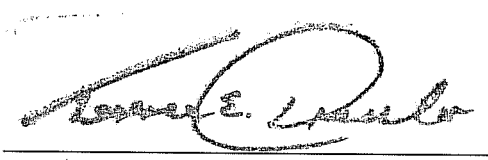
(a) The USEPA has provided written comments to the APCD and these comments require no modification to this permit. The APCD will issue a letter stating that this permit is a final Part 70 permit. The effective date that this permit will be considered a final Part 70 permit will be the date stamped on the APCD's letter.

(b) After the USEPA has provided the APCD written comments that require a modification to this permit, the APCD will modify this permit to address the USEPA's comments and issue the Part 70 permit as final. The re-issued permit will supersede this permit in its entirety.

D.2. **Compliance**. Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments.

D.3. **Severability**. In the event that any condition herein is determined to be invalid, all other conditions shall remain in force.

D.4 **Grounds for Revocation**. Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 et seq.



AIR POLLUTION CONTROL OFFICER

MAY 28 2008

DATE

Attachments:

- Calculations
- Equipment List for Permit to Operate 11579
- Permit Evaluation for Permit to Operate 11579

Notes:

- Next reevaluation due date: 12/22/2008
- Stationary sources are subject to an annual emission fee (see Fee Schedule B-3 of Rule 210).

Table 5.1-1
Venoco Ellwood Oil&Gas Facility: PTO 11579
Operating Equipment Description
Page 1 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No.	Device Specifications: Feed	Parameter	Size	Units	Usage Data: Capacity	Units	Load	Maximum Load Schedule: hr	day	qtr	year	Reference
				S, ppmv										
Combustion - External	Heater Treater: H-201	290	NG	80	4.399	MMBtu/hr	4.399	MMBtu/hr	1.0	1	24	2190	8760	A
	Heater Treater: H-202	289	NG	80	2.464	MMBtu/hr	2.464	MMBtu/hr	1.0	1	24	2190	8760	
	Heater Treater: H-203	291	NG	80	4.399	MMBtu/hr	4.399	MMBtu/hr	1.0	1	24	2190	8760	
	Process Heater: H-204	285	NG/Grace	239	25.000	MMBtu/hr	25.000	MMBtu/hr	1.0	1	24	2190	8760	
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	NG/Waste *	variable	140.000	MMBtu/hr	140.000	MMBtu/hr	--	See page 2 of 8 for details.				B
	Thermal Oxidizer: H-206	287	NG/Waste *	variable	220.000	MMBtu/hr	220.000	MMBtu/hr	--					
	Thermal Oxidizer: H-207	286	NG/Waste *	variable	9.500	MMBtu/hr	9.500	MMBtu/hr	--					
				RVP										
Oil Storage Tank	Oil Tank: T-202	283	Oil	4.8	35'd x 16'h	feet	6500	bbl/day	--	See spreadsheets in Section 10.2 in APCD PTO 7904-R7				C
	Oil Tank: T-203	6477	Oil	4.8	35'd x 16'h	feet	6500	bbl/day	--					
	Oil Tank: T-204	284	Oil	4.8	30'd x 24' h	feet	1000	bbl/day	--					
	EB Tank: T-101	8002	HC	1.5	12'd x 20' h	feet	403	bbl/day	--					
				psig										
Pigging Equipmt.	Receiver: Oil emulsion	9200	Oil	1	0.33'd x 4.5'l	feet	1.13	acf*	--	5	5	240	960	D
	Receiver: Utility	9200	Gas or oil	1	0.33'd x 4.5'l	feet	1.13	acf*	--	10	10	30	120	
	Receiver: Produced Gas	9200	Gas	1	0.33'd x 4.5'l	feet	1.13	acf*	--	10	10	30	120	
	Launcher: Seep Gas	9337	Gas	1	0.33'd x 4.5'l	feet	1.13	acf*	--	1	1	26	104	
								* - includes a 4.33' long pipe at each end of pig)						
				Service										
Sump/Wastewater Tanks	Sump Tank: S-202	9327	w/w	sec/VRS	6.5' dia	feet	33.18	sq. ft.	--	1	24	2190	8760	E
	Wash Tank: TK-201	106004	w/w	sec/VRS	30.0' dia	feet	706.86	sq. ft.	--	1	24	2190	8760	
	Oil Sump S-203	9330	oil		7' dia	feet	38.48	sq.ft	--	1	24	2190	8760	
Loading Rack	Rack - LPG/NGL	8003	LPG	balanced	127	psia	20.00	1000 gal/hr	--	1	6	250	1000	F
	Rack - Emulsion Breaker	8002	HC Liq.	submerged	403	bbl/day	6.72	1000 gal/hr	--	1	3	4	14	
Fugitive Components														
Gas/Light Liquid Service	Valves: Accessible	297	Gas/Lt.liq	--	3,543	comp-lp	3,543	comp-lp	--	1	24	2190	8760	G
	Valves: Inaccessible	310	Gas/Lt.liq	--	4	comp-lp	4	comp-lp	--	1	24	2190	8760	
	Valves: Unsafe	9118	Gas/Lt.liq	--	6	comp-lp	6	comp-lp	--	1	24	2190	8760	
	Connections: Accessible	300	Gas/Lt.liq	--	19,460	comp-lp	19,460	comp-lp	--	1	24	2190	8760	
	Connections: Inaccessible	312	Gas/Lt.liq	--	2,327	comp-lp	2,327	comp-lp	--	1	24	2190	8760	
	Connections: Unsafe	9120	Gas/Lt.liq	--	61	comp-lp	61	comp-lp	--	1	24	2190	8760	
	Compressor Seal	9121	Gas/Lt.liq	--	20	comp-lp	20	comp-lp	--	1	24	2190	8760	
	Pres. Relief Valve: Accessible	9122	Gas/Lt.liq	--	73	comp-lp	73	comp-lp	--	1	24	2190	8760	
	Pres. Relief Valve: Inaccessible	9123	Gas/Lt.liq	--	2	comp-lp	2	comp-lp	--	1	24	2190	8760	
	Pressure Relief Valve: Unsafe	N/A	Gas/Lt.liq	--	-	comp-lp	-	comp-lp	--	1	24	2190	8760	
	Pump Seal	9125	Gas/Lt.liq	--	10	comp-lp	10	comp-lp	--	1	24	2190	8760	
				sub-total =	25,506		25,506	comp-lp						
Oil Service	Valves: Accessible	298	Oil	--	458	comp-lp	458	comp-lp	--	1	24	2190	8760	G
	Connections: Accessible	301	Oil	--	2,428	comp-lp	2,428	comp-lp	--	1	24	2190	8760	
	Connections: Unsafe	N/A	Oil	--	-	comp-lp	-	comp-lp	--	1	24	2190	8760	
	Pres. Relief Valve: Accessible	9127	Oil	--	-	comp-lp	-	comp-lp	--	1	24	2190	8760	
	Pump Seal	9128	Oil	--	7	comp-lp	7	comp-lp	--	1	24	2190	8760	
				sub-total =	2,893		2,893							
Solvent/coatings Usage	Cleaning/Degreasing*	9521	solvent/coating	--	1,500 *	gal/yr	125	gal/month	--	1	8	2190	8760	

* -- The usage of solvent/coating is estimated

Table 5.1-1
Venoco Ellwood Oil&Gas Facility: PTO 11579
Operating Equipment Description
Page 2 of 8

Equipment Category	Emissions Unit	APCD: IDS Equipment No	Device Specifications Fuel	Parameter	Size	Units	Usage Data Capacity	Units	Load	Maximum Load Schedule hr	day	qtr	year*	Reference
Combustion - Flare/TO			Gas	ppmv										
H-205	Planned - Pilot Gas	***	PUC	205	0.060	MMBtu/hr	0.060	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	34.000	MMBtu/hr	34.000	MMBtu/hr	--	1	24	1580	6318	
	Unplanned	***	Various	15,000	140.000	MMBtu/hr	140.000	MMBtu/hr	--	0	0	0	0	
H-206[1]	Planned - Pilot Gas	***	PUC	205	0.340	MMBtu/hr	0.340	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	20.320	MMBtu/hr	20.320	MMBtu/hr	--	1	24	2190	8760	
	Unplanned	***	Various	15,000	220.000	MMBtu/hr	220.000	MMBtu/hr	--	0	0	0	0	
H-207[1]	Planned - Pilot Gas	***	PUC	205	1.000	MMBtu/hr	1.000	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	8.500	MMBtu/hr	8.500	MMBtu/hr	--	1	24	2190	8760	
	Unplanned	***	Various	15,000	9.500	MMBtu/hr	9.500	MMBtu/hr	--	0	0	0	0	
Combined Units:	Planned - Pilot Gas	***	PUC	205	1.400	MMBtu/hr	1.400	MMBtu/hr	--	1	24	2190	8760	B
H-205/206/207	Planned	***	Various	205	34.000	MMBtu/hr	34.000	MMBtu/hr	--	1	24	1580	6318	
	Unplanned	***	Various	15,000	369.500	MMBtu/hr	369.500	MMBtu/hr	--	0	0	0	0	

1. These thermal oxidizers are not permitted to incinerate Lo-Cat System exhaust.
* -- The annual hours listed do not constitute any 'hourly'operational limits: the numbers are merely used to compute annual emissions
-- Annual hours of operation for H-205 are based on a total heat input of 215,354 MMBtu/year for all planned flaring.
-- Annual hours of operation for the combined units is based on a total heat input of 227,092 MMBtu/year for all planned flaring.

Table 5.1-2
Venoco Ellwood Oil&Gas Facility: PTO 11579
Equipment Emission Factors
Page 3 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No	Emission Factors NOx	ROC	CO	SOx	PM	PM10	Units	Reference
Combustion - External	Heater Treater: H-201	290	0.098	0.005	0.082	0.012	0.007	0.007	lb/MMBtu	A
	Heater Treater: H-202	289	0.098	0.005	0.082	0.012	0.007	0.007	lb/MMBtu	
	Heater Treater: H-203	291	0.098	0.005	0.082	0.012	0.007	0.007	lb/MMBtu	
	Process Heater: H-204	285	0.036	0.005	0.297	0.037	0.007	0.007	lb/MMBtu	
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	See page 4 of 8 for details.						lb/MMBtu	B
	Thermal Oxidizer: H-206	287							lb/MMBtu	
	Thermal Oxidizer: H-207	286							lb/MMBtu	
Oil Storage Tank	Oil Tank: T-202	283	See spreadsheets in Section 10.2 in APCD/Part 70 PTO 7904-R7						bbl/yr	C
	Oil Tank: T-203	6477							bbl/yr	
	Oil Tank: T-204	284							bbl/yr	
	EB Tank: T-101	8002							bbl/yr	
Pigging Equipmt.	Receiver. Oil emulsion	9200	-	0.0759	-	-	-	-	lb ROC/acf-event	D
	Receiver: Utility	9200	-	0.0759	-	-	-	-	lb ROC/acf-event	
	Receiver. Produced Gas	9200	-	0.0192	-	-	-	-	lb ROC/acf-event	
	Launcher: Seep Gas	9337	-	0.0192	-	-	-	-	lb ROC/acf-event	
Sump/Wastewater Tanks	Sump Tank: S-202	9327	-	0.001	-	-	-	-	lb/ft2 - day	E
	Wash Tank: TK-201	106004	-	0.001	-	-	-	-	lb/ft2 - day	
	Oil Sump S-203	9330	-	0.018	-	-	-	-	lb/ft2 - day	
Loading Rack	Rack - LPG/NGL	8003	-	0.024	-	-	-	-	lb/1000 gallons	F
	Rack - Emulsion Breaker	8002	-	1.079	-	-	-	-	lb/1000 gallons	
Fugitive Components										
Gas/Light Liquid Service	Valves: Accessible	297	-	0.080	-	-	-	-	lb/clp-day	G
	Valves: Inaccessible	310	-	0.080	-	-	-	-	lb/clp-day	
	Valves: Unsafe	9118	-	0.402					lb/clp-day	
	Connections: Accessible	300	-	0.005	-	-	-	-	lb/clp-day	
	Connections: Inaccessible	312	-	0.005	-	-	-	-	lb/clp-day	
	Connections: Unsafe	9120	-	0.025	-	-	-	-	lb/clp-day	
	Compressor Seal	9121	-	0.432	-	-	-	-	lb/clp-day	
	Pres. Relief Valve: Accessible	9122	-	0.139	-	-	-	-	lb/clp-day	
	Pres. Relief Valve: Inaccessible	9123		0.139	-	-	-	-	lb/clp-day	
	Pressure Relief Valve: Unsafe	N/A		0.696	-	-	-	-	lb/clp-day	
	Pump Seal	9125		0.521	-	-	-	-	lb/clp-day	
Oil Service	Valves: Accessible	298	-	0.028	-	-	-	-	lb/clp-day	G
	Connections: Accessible	301	-	0.005	-	-	-	-	lb/clp-day	
	Connections: Unsafe	N/A		0.023	-	-	-	-	lb/clp-day	
	Pres. Relief Valve: Accessible	9127		0.115	-	-	-	-	lb/clp-day	
	Pump Seal	9128	-	0.086	-	-	-	-	lb/clp-day	
Solvent/coatings Usage	Cleaning/Degreasing	9521	-	250	-	-	-	-	g/l	

Table 5.1-2
Venoco Ellwood Oil&Gas Facility: PTO 11579
Equipment Emission Factors
Page 4 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No	Emission Factors NOx	ROC	CO	SOx	PM	PM10	Units	Reference
Combustion - Flare/TO										
H-205	Planned - Pilot Gas	***	0.0700	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	B
	Planned	***	0.0700	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	
	Unplanned	***							lb/MMBtu	
H-206	Planned - Pilot Gas	***	0.0700	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	B
	Planned	***	0.0980	0.0054	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	
	Unplanned	***							lb/MMBtu	
H-207	Planned - Pilot Gas	***	0.0700	0.0030	0.4530	0.0307	0.0140	0.0140	lb/MMBtu	B
	Planned	***	0.0980	0.0054	0.4530	0.0307	0.0075	0.0075	lb/MMBtu	
	Unplanned	***							lb/MMBtu	
Combined Units:	Planned - Pilot Gas	***							lb/MMBtu	B
	Planned	***							lb/MMBtu	
	Unplanned	***							lb/MMBtu	

Table 5.1-3
Venoco Ellwood Oil&Gas Facility: PTO 11579
Hourly and Daily Emissions
Page 5 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No	NOx lbs/hr	NOx lbs/day	ROC lbs/hr	ROC lbs/day	CO lbs/hr	CO lbs/day	SOx lbs/hr	SOx lbs/day	PM lbs/hr	PM lbs/day	PM10 lbs/hr	PM10 lbs/day	Federal Enforceability
Combustion - External	Heater Treater: H-201	290	0.43	10.35	0.02	0.57	0.36	8.69	0.05	1.27	0.03	0.79	0.03	0.79	FE
	Heater Treater: H-202	289	0.24	5.80	0.01	0.32	0.20	4.87	0.03	0.71	0.02	0.44	0.02	0.44	FE
	Heater Treater: H-203	291	0.43	10.35	0.02	0.57	0.36	8.69	0.05	1.27	0.03	0.79	0.03	0.79	FE
	Process Heater: H-204	285	0.90	21.60	0.13	3.24	7.43	178.20	0.93	22.20	0.19	4.47	0.18	4.47	FE
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	See page 6 of 8 for details.												FE
	Thermal Oxidizer: H-206	287													FE
	Thermal Oxidizer: H-207	286													FE
Oil Storage Tank	Oil Tank: T-202	283	-	-	0.27	6.50	-	-	-	-	-	-	-	-	A
	Oil Tank: T-203	6477	-	-	0.27	6.50	-	-	-	-	-	-	-	-	A
	Oil Tank: T-204	284	-	-	0.09	2.22	-	-	-	-	-	-	-	-	A
	EB Tank: T-101	8002		sub-total =	0.63	15.22									A
			-	-	0.05	1.29	-	-	-	-	-	-	-	-	FE
Pigging Equipmt.	Receiver. Oil emulsion	9200	-	-	0.43	0.43	-	-	-	-	-	-	-	-	A
	Receiver: Utility	9200	-	-	0.85	0.85	-	-	-	-	-	-	-	-	A
	Receiver. Produced Gas	9200	-	-	0.22	0.22	-	-	-	-	-	-	-	-	A
	Launcher: Seep Gas	9337	-	-	0.02	0.02	-	-	-	-	-	-	-	-	A
Sump/Wastewater Tanks	Sump Tank: S-202	9327	-	-	0.00	0.03	-	-	-	-	-	-	-	-	A
	Wash Tank: TK-201	106004	-	-	0.03	0.64	-	-	-	-	-	-	-	-	A
	Oil Sump S-203	9330	-	-	0.03	0.69	-	-	-	-	-	-	-	-	A
Loading Rack	Rack - LPG/NGL	8003	-	-	0.48	2.88	-	-	-	-	-	-	-	-	A
	Rack - Emulsion Breaker	8002	-	-	7.25	21.75	-	-	-	-	-	-	-	-	FE
Fugitive Components															
Gas/Light Liquid Service	Valves: Accessible	297	-	-	11.87	284.89	-	-	-	-	-	-	-	-	A
	Valves: Inaccessible	310	-	-	0.01	0.32	-	-	-	-	-	-	-	-	A
	Valves: Unsafe	9118	-	-	0.10	2.41	-	-	-	-	-	-	-	-	A
	Connections: Accessible	300	-	-	4.04	97.07	-	-	-	-	-	-	-	-	A
	Connections: Inaccessible	312	-	-	0.48	11.61	-	-	-	-	-	-	-	-	A
	Connections: Unsafe	9120	-	-	0.06	1.52	-	-	-	-	-	-	-	-	A
	Pres. Relief Valve: Accessible	9121	-	-	0.36	8.64	-	-	-	-	-	-	-	-	A
	Pres. Relief Valve: Inaccessible	9122	-	-	0.42	10.17	-	-	-	-	-	-	-	-	A
	Pressure Relief Valve: Inaccessible	9123	-	-	0.01	0.28	-	-	-	-	-	-	-	-	A
	Pressure Relief Valve: Unsafe	N/A	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
	Pump Seal	9125	-	-	0.22	5.21	-	-	-	-	-	-	-	-	A
				sub-total =	17.59	422.11									A
Oil Service	Valves: Accessible	298	-	-	0.54	13.02	-	-	-	-	-	-	-	-	A
	Connections: Accessible	301	-	-	0.46	11.12	-	-	-	-	-	-	-	-	A
	Pres. Relief Valve: Accessible	N/A	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
	Pressure Relief Valve: Accessible	9127	-	-	0.00	0.00	-	-	-	-	-	-	-	-	A
	Pump Seal	9128	-	-	0.03	0.60	-	-	-	-	-	-	-	-	A
				sub-total =	1.03	24.74									A
Solvent/coatings Usage*	Cleaning/Degreasing*	9521	-	-	1.09	8.68	-	-	-	-	-	-	-	-	N/A

*-- Indicates this is an estimate of emissions and not a limit

Table 5.1-3
Venoco Ellwood Oil&Gas Facility. PTO 11579
Hourly and Daily Emissions
Page 6 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No.	NOx lbs/hr	NOx lbs/day	ROC lbs/hr	ROC lbs/day	CO lbs/hr	CO lbs/day	SOx lbs/hr	SOx lbs/day	PM lbs/hr	PM lbs/day	PM10 lbs/hr	PM10 lbs/day	Federal Enforceability
Combustion - Flare/TO															
H-205	Planned - Pilot Gas	***	0.00	0.10	0.00	0.00	0.03	0.65	0.00	0.04	0.00	0.02	0.00	0.02	FE
	Planned	***	2.38	57.12	0.10	2.45	15.40	369.65	1.04	25.05	0.48	11.42	0.48	11.42	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-206	Planned - Pilot Gas	***	0.02	0.57	0.00	0.02	0.15	3.70	0.01	0.25	0.00	0.11	0.00	0.11	FE
	Planned	***	1.99	47.81	0.11	2.63	9.20	220.92	0.62	14.97	0.28	6.83	0.28	6.83	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-207	Planned - Pilot Gas	***	0.07	1.68	0.00	0.07	0.45	10.87	0.03	0.74	0.01	0.34	0.01	0.34	FE
	Planned	***	0.83	20.00	0.05	1.10	3.85	92.41	0.26	6.26	0.06	1.52	0.06	1.52	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
Combined Units:	Planned - Pilot Gas	***	0.10	2.35	0.00	0.10	0.63	15.22	0.04	1.03	0.02	0.47	0.02	0.47	FE
H-205/206/207	Planned	***	2.38	57.12	0.10	2.45	15.40	369.65	1.04	25.05	0.48	11.42	0.48	11.42	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Worst-Case Flaring Scenario		2.48	59.47	0.11	2.55	16.04	384.87	1.09	26.08	0.50	11.89	0.50	11.89	FE

Notes:
- FE means federally enforceable
- A means APCD enforceable only
- NE means not enforcebale

Table 5.1-4
Venoco Ellwood Oil&Gas Facility: PTO 11579
Annual Emissions
Page 7 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No.	NOx tpy	ROC tpy	CO tpy	SOx tpy	PM tpy	PM10 tpy	Federal Enforceability
Combustion - External	Heater Treater: H-201	290	1.89	0.10	1.59	0.23	0.14	0.13	FE
	Heater Treater: H-202	289	1.06	0.06	0.89	0.13	0.08	0.08	FE
	Heater Treater: H-203	291	1.89	0.10	1.59	0.23	0.14	0.13	FE
	Process Heater: H-204	285	3.94	0.59	32.52	4.05	0.82	0.77	FE
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	See page 8 of 8 for details.						FE
	Thermal Oxidizer: H-206	287							FE
	Thermal Oxidizer: H-207	286							FE
Oil Storage Tank	Oil Tank: T-202	283	-	1.19	-	-	-	-	A
	Oil Tank: T-203	6477	-	1.19	-	-	-	-	A
	Oil Tank: T-204	284	-	0.41	-	-	-	-	A
	EB Tank: T-101	8002		2.79					A
			-	0.24	-	-	-	-	FE
Pigging Equipmt.	Receiver. Oil emulsion	9200	-	0.04	-	-	-	-	A
	Receiver: Utility	9200	-	0.01	-	-	-	-	A
	Receiver. Produced Gas	9200	-	0.00	-	-	-	-	A
	Launcher: Seep Gas	9337	-	0.00	-	-	-	-	A
Sump/Wastewater Tanks	Sump Tank: S-202	9327	-	0.01	-	-	-	-	A
	Wash Tank: TK-201	106004	-	0.12	-	-	-	-	A
	Oil Sump S-203	9330	-	0.13	-	-	-	-	A
Loading Rack	Rack - LPG/NGL	8003	-	0.24	-	-	-	-	A
	Rack - Emulsion Breaker	8002	-	0.05	-	-	-	-	FE
Fugitive Components									
Gas/Light Liquid Service	Valves: Accessible	297	-	51.99	-	-	-	-	A
	Valves: Inaccessible	310	-	0.06	-	-	-	-	A
	Valves: Unsafe	9118	-	0.44	-	-	-	-	A
	Connections: Accessible	300	-	17.71	-	-	-	-	A
	Connections: Inaccessible	312	-	2.12	-	-	-	-	A
	Connections: Unsafe	9120	-	0.28	-	-	-	-	A
	Pres. Relief Valve: Accessible	9121	-	1.58	-	-	-	-	A
	Pres. Relief Valve: Inaccessible	9122	-	1.86	-	-	-	-	A
	Pressure Relief Valve: Inaccessible	9123	-	0.05	-	-	-	-	A
	Pressure Relief Valve: Unsafe	N/A	-	0.00	-	-	-	-	A
	Pump Seal	9125	-	0.95	-	-	-	-	A
			sub-total =	77.03					A
Oil Service	Valves: Accessible	298	-	2.38	-	-	-	-	A
	Connections: Accessible	301	-	2.03	-	-	-	-	A
	Pres. Relief Valve: Accessible	N/A	-	0.00	-	-	-	-	A
	Pressure Relief Valve: Accessible	9127	-	0.00	-	-	-	-	A
	Pump Seal	9128	-	0.11	-	-	-	-	A
			sub-total =	4.52					A
Solvent/coatings Usage*	Cleaning/Degreasing	9521		1.56	-	-	-	-	N/A

** -- Indicates this is an estimate of emissions and not a limit*

Table 5.1-4
Venoco Ellwood Oil&Gas Facility: PTO 11579
Annual Emissions
Page 8 of 8

Equipment Category	Emissions Unit	APCD IDS Equipment No.	NOx tpy	ROC tpy	CO tpy	SOx tpy	PM tpy	PM10 tpy	Federal Enforceability
Combustion - Flare/TO									
H-205	Planned - Pilot Gas	***	0.02	0.00	0.12	0.01	0.00	0.00	FE
	Planned	***	7.52	0.32	48.66	3.30	1.50	1.50	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-206	Planned - Pilot Gas	***	0.10	0.00	0.67	0.05	0.02	0.02	FE
	Planned	***	8.73	0.48	40.32	2.73	1.25	1.25	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-207	Planned - Pilot Gas	***	0.31	0.01	1.98	0.13	0.06	0.06	FE
	Planned	***	3.65	0.20	16.87	1.14	0.28	0.28	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
Combined Units:	Planned - Pilot Gas	***	0.43	0.02	2.78	0.19	0.09	0.09	FE
H-205/206/207	Planned	***	7.52	0.32	48.66	3.30	1.50	1.50	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Worst-Case Flaring Scenario	***	7.95	0.34	51.44	3.49	1.59	1.59	FE

Notes:
- FE means federally enforceable
- A means APCD enforceable only

Table 5.2
Venoco Ellwood Oil&Gas Facility: PTO 11579
Total Permitted Facility Emissions

A. HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	2.00	0.20	8.35	1.06	0.27	0.25
Combustion - Flare/TO	2.48	0.11	16.04	1.09	0.50	0.50
Oil Storage Tank	-	0.68	-	-	-	-
Pigging Equipment	-	1.52	-	-	-	-
Sumps/W-W Tanks	-	0.06	-	-	-	-
Loading Rack	-	7.73	-	-	-	-
Fug.Comp. - - Gas Service	-	17.59	-	-	-	-
Fug. Comp. -- Oil Service	-	1.03	-	-	-	-
solvent/coating	-	1.09	-	-	-	-
Totals =	4.48	28.91	24.39	2.15	0.77	0.75

B. DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	48.10	4.69	200.46	25.44	6.48	6.48
Combustion - Flare/TO	59.47	2.55	384.87	26.08	11.89	11.89
Oil Storage Tank	-	16.51	-	-	-	-
Pigging Equipment	-	1.52	-	-	-	-
Sumps/W-W Tanks	-	0.37	-	-	-	-
Loading Rack	-	24.63	-	-	-	-
Fug.Comp. - - Gas Service	-	422.11	-	-	-	-
Fug. Comp. -- Oil Service	-	24.74	-	-	-	-
solvent/coating	-	8.68	-	-	-	-
Totals =	107.57	497.12	585.33	51.53	18.38	18.38

C. ANNUAL (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	8.78	0.86	36.58	4.64	1.18	1.11
Combustion - Flare/TO	7.95	0.34	51.44	3.49	1.59	1.59
Oil Storage Tank	-	3.03	-	-	-	-
Pigging Equipment	-	0.05	-	-	-	-
Sumps/W-W Tanks	-	0.25	-	-	-	-
Loading Rack	-	0.29	-	-	-	-
Fug.Comp. - - Gas Service	-	77.03	-	-	-	-
Fug. Comp. -- Oil Service	-	4.52	-	-	-	-
solvent/coating	-	1.56	-	-	-	-
Totals =	16.73	87.93	88.02	8.13	2.77	2.70

Table 5.3
Venoco Ellwood Oil&Gas Facility: PTO 11579
Federal Potential to Emit Information

A. HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	2.00	0.20	8.35	1.06	0.27	0.25
Combustion - Flare/TO	2.48	0.11	16.04	1.09	0.50	0.50
Oil Storage Tank	-	0.68	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-
Loading Rack	-	7.73	-	-	-	-
Fug.Comp. - - Gas Service	-	17.59	-	-	-	-
Fug. Comp. -- Oil Service	-	0.00	-	-	-	-
solvent/coating	=	0.00	=	=	=	=
Totals =	4.48	26.30	24.39	2.15	0.77	0.75

B. DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	48.10	4.69	200.46	25.44	6.48	6.48
Combustion - Flare/TO	59.47	2.55	384.87	26.08	11.89	11.89
Combustion - Prev.exempt	402.24	27.36	86.65	4.56	27.36	27.36
Oil Storage Tank	-	16.51	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-
Loading Rack	-	24.63	-	-	-	-
Fug.Comp. - - Gas Service	-	422.11	-	-	-	-
Fug. Comp. -- Oil Service	-	0.00	-	-	-	-
solvent/coating	=	0.00	=	=	=	=
Totals =	509.81	497.85	671.98	56.09	45.74	45.74

C. ANNUAL (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Combustion - External	8.78	0.86	36.58	4.64	1.18	1.11
Combustion - Flare/TO	7.95	0.34	51.44	3.49	1.59	1.59
Combustion - Prev.exempt	1.68	0.11	0.36	0.02	0.11	0.11
Oil Storage Tank	-	3.05	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-
Loading Rack	-	0.29	-	-	-	-
Fug.Comp. - - Gas Service	-	77.03	-	-	-	-
Fug. Comp. -- Oil Service	-	0.00	-	-	-	-
solvent/coating	-	0.00	-	-	-	-
Totals =	18.41	81.66	88.38	8.15	2.88	2.81

Table 10.2-4
Venoco Ellwood Oil&Gas Facility: PTO 11579
Facility #0028 NEI-90

I. This PTO's "I" (NEI-90)

Permit	Date	NOx		ROC		CO		SOx		PM		PM10	
No.	Issued	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
PTO 11579	April '08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

II. This Facility's "P1s"
Enter all facility "P1" NEI-90s below:

Permit	Date	NOx		ROC		CO		SOx		PM		PM10	
No.	Issued	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 8262	Dec '91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 9217-01	Sept '94	0.00	0.00	0.00	0.00	158.40	28.90	0.00	0.00	5.30	1.00	5.30	1.00
ATC 9218	Feb '96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 9473-06	Apr '99	57.99	4.40	2.50	0.20	214.90	39.30	38.50	3.40	13.10	1.20	13.10	1.20
ATC 10022	Dec '98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC/PTO 10537	May '99	0.00	0.00	4.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10749	Nov. '02	0.00	0.00	3.54	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 10941	Jan '03	48.72	4.82	4.18	0.69	215.39	31.17	21.85	2.16	9.74	0.96	9.74	0.96
ATC 11106	Sep '04	0.00	0.00	1.31	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATC 11169	Sep '04	0.00	1.84	0.00	0.08	0.00	11.89	0.00	0.81	0.00	0.37	0.00	0.37
ATC 11579	July '05	0.00	0.00	15.97	2.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		**106.71**	**11.06**	**31.70**	**4.57**	**588.69**	**111.26**	**60.35**	**6.37**	**28.14**	**3.53**	**28.14**	**3.53**

Notes:
(1) Facility NEI from IDS.
(2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
(3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

III. This Facility's "P2" NEI-90 Decreases [based on (29 + 4.6) MMBtu/hr of emissions and on "P1" based limits]
Enter all facility "P2" NEI-90s below:

Permit	Date	NOx		ROC		CO		SOx		PM		PM10	
No.	Issued	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 10941	Jan '03	56.45	4.40	2.42	0.20	365.30	39.30	25.32	3.40	11.29	1.20	11.29	1.20
Totals		**56.45**	**4.40**	**2.42**	**0.20**	**365.30**	**39.30**	**25.32**	**3.40**	**11.29**	**1.20**	**11.29**	**1.20**

Notes:
(1) Facility NEI from IDS.
(2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
(3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

IV. This Facility's Pre-90 "D" Decreases
Enter all facility "D" decreases below:

Permit	Date	NOx		ROC		CO		SOx		PM		PM10	
No.	Issued	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
None		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Notes:
(1) Facility "D" from IDS.
(2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
(3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

V. Calculate This Facility's NEI-90
Table below summarizes facility NEI-90 as equal to: I+ (P1-P2) -D

	NOx		ROC		CO		SOx		PM		PM10	
Term	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
PTO "I" (see P1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P1	106.71	11.06	31.70	4.57	588.69	111.26	60.35	6.37	28.14	3.53	28.14	3.53
P2	56.45	4.40	2.42	0.20	365.30	39.30	25.32	3.40	11.29	1.20	11.29	1.20
D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FNEI-90	**50.26**	**6.66**	**29.28**	**4.37**	**223.39**	**71.96**	**35.03**	**2.97**	**16.85**	**2.33**	**16.85**	**2.33**

Notes:
(1) Resultant FNEI-90 from above Section I thru IV data.
(2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
(3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

Table 10.2-5
Venoco Ellwood Oil&Gas Facility: PTO 11579
Ellwood Source #0028 NEI-90

Facility No.	Effective Permit	Effective Date	NOx		ROC		CO		SOx		PM		PM10	
			lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
0028	Reeval 7904-R7 + ATC 11579	current	**50.26**	**6.66**	**29.28**	**4.37**	**223.39**	**71.96**	**35.03**	**2.97**	**16.85**	**2.33**	**16.85**	**2.33**
3105	Reeval 8234-R5	current	4.67	0.77	10.58	1.87	25.40	4.20	2.34	1.06	1.37	0.23	1.37	0.23
1065	PT-70/Reeval 4441-R2	current	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3035	PT-70/Reeval 8103-R4	May '98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Totals =	**54.93**	**7.43**	**39.86**	**6.24**	**248.79**	**76.16**	**37.37**	**4.03**	**18.22**	**2.56**	**18.22**	**2.56**

Notes: (1) Facility NEI from IDS.
(2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding.
(3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero.

PTO 11579 / FID: 00028 Ellwood Onshore Facility / SSID: 01063

A PERMITTED EQUIPMENT

1 Fugitive Hydrocarbon Components - CLP Counts

1.1 Gas/Light Liq Service: Valves: Accessible

Device ID #	**000297**	***Device Name***	**Gas/Light Liq Service: Valves: Accessible**
Rated Heat Input		*Physical Size*	3543.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	3543 component leakpaths		

1.2 Gas/Light Liq Service: Connections: Accessible

Device ID #	**000300**	***Device Name***	**Gas/Light Liq Service: Connections: Accessible**
Rated Heat Input		*Physical Size*	19460.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	19460 component leakpaths		

1.3 Gas/Lt Liquid Service: Press Relief Valves: Accessible

Device ID #	**009122**	***Device Name***	**Gas/Lt Liquid Service: Press Relief Valves: Accessible**
Rated Heat Input		*Physical Size*	73.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	73 component leakpaths		

1.4 Gas/Lt Liquid Service: Pressure Relief Valves: Inaccessible

Device ID #	**009123**	***Device Name***	**Gas/Lt Liquid Service: Pressure Relief Valves: Inaccessible**
Rated Heat Input		*Physical Size*	1.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	1 component leakpaths		

1.5 Gas/Light Liq Service: Connections: Inaccessible

Device ID #	**000312**	***Device Name***	**Gas/Light Liq Service: Connections: Inaccessible**
Rated Heat Input		*Physical Size*	2327.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2327 component leakpaths		

1.6 Gas/Light Liq Service: Connections: Unsafe

Device ID #	**009120**	***Device Name***	**Gas/Light Liq Service: Connections: Unsafe**
Rated Heat Input		*Physical Size*	61.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	61 component leakpaths		

1.7 Oil: Valves: Accessible

Device ID #	**000298**	***Device Name***	**Oil: Valves: Accessible**
Rated Heat Input		*Physical Size*	458.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	456 component leakpaths		

1.8 Oil: Pressure Relief Valves: Accessible

Device ID #	**009127**	***Device Name***	**Oil: Pressure Relief Valves: Accessible**
Rated Heat Input		*Physical Size*	0.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	0 component leakpaths		

1.9 Oil: Connections: Accessible

Device ID #	**000301**	***Device Name***	**Oil: Connections: Accessible**
Rated Heat Input		*Physical Size*	2428.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2284 component leakpaths		

1.10 Oil: Pump Seals

Device ID #	**009128**	***Device Name***	**Oil: Pump Seals**
Rated Heat Input		*Physical Size*	7.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	7 component leakpaths		

2 Permeate Tubes - Grace Unit

2.1 Permeate Tubes - first stage skid - Bank B

Device ID #	**106099**	***Device Name***	**Permeate Tubes - first stage skid - Bank B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of four (4) tubes, each 10.75" diameter by 23' long		

2.2 Permeate Tubes - first stage skid - Bank A

Device ID #	**009399**	***Device Name***	**Permeate Tubes - first stage skid - Bank A**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of four (4) tubes, each 10.75" diameter by 23' long		

2.3 Polishing Filter

Device ID #	**009397**	***Device Name***	**Polishing Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-211
Model		*Serial Number*	
Location Note			
Device Description	8" diameter by 7' tall		

2.4 Guard Bed

Device ID #	**009398**	***Device Name***	**Guard Bed**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-210
Model		*Serial Number*	
Location Note			
Device Description	18" diameter by 7' tall		

2.5 Permeate Tubes - first stage skid - Bank C

Device ID #	**106340**	***Device Name***	**Permeate Tubes - first stage skid - Bank C**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of four (4) tubes, each 10.75" diameter by 23' long		

2.6 Coalescing Filter

Device ID #	**106100**	***Device Name***	**Coalescing Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-216
Model		*Serial Number*	
Location Note			
Device Description	8" diameter by 7' tall		

2.7 Filter Separator

Device ID #	**009492**	***Device Name***	**Filter Separator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-201
Model		*Serial Number*	
Location Note			
Device Description	10" and 6" diameter by 10' long		

2.8 Permeate Tubes - second stage skid

Device ID #	**111090**	***Device Name***	**Permeate Tubes - second stage skid**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of two (2) tubes, each 10.75" diameter by 23' long		

2.9 Filter Separator

Device ID #	**111091**	***Device Name***	**Filter Separator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-215
Model		*Serial Number*	
Location Note			
Device Description	10" and 6" dia by 7' long		

2.10 Guard Bed

Device ID #	**111092**	***Device Name***	**Guard Bed**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-217
Model		*Serial Number*	
Location Note			
Device Description	16" dia by 7' tall		

2.11 Polishing Filter

Device ID #	**111093**	***Device Name***	**Polishing Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-218
Model		*Serial Number*	
Location Note			
Device Description	8" dia by 7' tall		

3 Sweet Gas Compression

3.1 Standby Compressors

Device ID #	**009372**	***Device Name***	**Standby Compressors**
Rated Heat Input		*Physical Size*	600.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	K-205 [CFB], K-206 [HHE]
Model		*Serial Number*	
Location Note			
Device Description	Each three-stage compressor powered by electric motor horsepower rating (each): 600.0.		

Santa Barbara County
Air Pollution Control District

PERMIT EVALUATION FOR
PERMIT TO OPERATE 11579

1.0 BACKGROUND

1.1 To meet The Gas Company/Sempra Energy's pipe line gas specifications, Venoco modified the CO_2 removal skid at the facility as described in APCD's Authority to Construct (ATC) Number 10941 issued in August 2004. This project is an extension of that original project's objective to increase the CO_2 removal efficiency of the plant.

In the project addressed in this PTO, Venoco added a bank of four membrane tubes to the existing eight- membrane-tube, two-bank First-stage Grace Unit skid. These tubes increased the operating life of the existing membrane tubes. A second two-membrane-tube bank was added as a Second-stage to the existing First-stage unit. The Second-stage unit allows for recapturing of the hydrocarbons lost in the First stage unit operations, and helps in improving the sales gas quality control.

As part of this project Venoco reconfigured compressors K-205 and K-206 to allow them to compress first stage permeate gas before it is sent to the second stage tubes; the controls for cooler E-205 were modified to allow for better control of the gas temperature going in to the Grace unit; filter separator F-215, coalescing filter F-216, guard bed F-217, and polishing filter F-218 were all added to treat the first stage permeate before it is sent to the second stage tubes.

An additional modification being made at the same time is to add a connection from the LPG stabilizer to allow stabilizer overhead gas to be sent to the in plant fuel gas header. This will reduce the quantity of gas flared at the facility.

1.2 Permit History: No permits have been issued to this facility since PTO 7904-R7 was issued in December, 2005:

1.3 Compliance History: The EOF has operated in compliance with all APCD Rules and Regulations since ATC 11579 was issued. A detailed compliance review of the EOF for earlier operations can be found at the Part 70/APCD PTO 7904-R7 (dated 12/22/2005).

2.0 ENGINEERING ANALYSIS

2.1 **Grace Unit** – The modified Grace CO_2 removal skids are designed to receive 13 MMscf/day of feed gases containing 10% CO_2 at a pressure of 1000 psig and a temperature of 120° F. The gases pass over a set of membranes in the First stage skid that would preferentially allow CO_2 to pass through. About 9 MMscf/day of gas is not able to pass through the membranes; this constitutes a 3% CO_2, PUC-quality sales gas stream. About 4 MMscf/day of gas is produced as a 30% CO_2, low-Btu (760 Btu/scf), low pressure 'First stage permeate gas' stream. A portion of this first stage permeate stream is routed through flow meter FR-732 to process heater H-204. Depending on operating conditions, up to 4 MMscf/day of the first stage permeate is recompressed to 1000 psig by compressors K-205/K-206 and re-processed through the Second stage skid of the Grace Membrane unit. If flow rates or CO_2 content of the gas is low enough the first stage permeate is not sent to the second stage skid; it is sent directly to the in-plant fuel gas header or thermal oxidizers.

The Second stage skid outputs and re-cycles a stream of about 10% CO_2 to the First stage skid; the second stage permeate with about 60-70% CO_2 is sent to the relief scrubber unit V-221. This last stream is used at thermal oxidizer H-205 to incinerate the LoCat air for control of odors, benzene and ROC's.

Fugitive Components – Venoco estimated the number of fugitive emission component leak paths (clps) that would be installed for this project as follows: 150 valve leak paths, 477 connection leak paths and 2 PRD leak paths (to VRS). The final count of components actually installed is: 166 valve leak paths, 525 connection leak paths and 2 PRD leak paths (to VRS). The calculation methodology for the fugitive emissions is:

$$ER = [(EF \times CLP \div 24) \times (1 - CE) \times (HPP)]$$

where:

ER =	emission rate (lb/period)
EF =	ROC emission factor (lb/clp-day)
CLP =	component-leak-path (clp)
CE =	control efficiency
HPP =	operating hours per time period (hrs/period)

The new components being added as part of this project are subject to NSR and contribute to the NEI. Because the actual number of components installed is slightly higher than what was proposed for the ATC, the "I" term for the ATC will be adjusted to reflect the fugitive emissions from the number of components actually installed.

The facility-wide fugitive component leak path counts submitted by Venoco as part of this PTO application and during the second half 2007 CVR include counts higher than allowed by PTO 7904-R7 and ATC 11579. It was determined that these extra clps are pre-existing fugitive components which were erroneously left off the previous component inventory and permit. A large number of these previously uncounted components are non-stainless steel components under ½" in diameter.

These components are being added to the permit at this time. Since these components are assumed to be pre-1990 components they do not contribute to the facility's NEI. They are included in emissions calculations and contribute to the FPTE.

A detailed engineering analysis of all emission units at the EOF not discussed in this PTO can be found in the Part 70/APCD PTO 7904-R7 (dated 12/22/2005).

2.2 Emission Controls: A detailed review of emission controls for all emission units at EOF, including the fugitive components, is provided at the Part 70/APCD PTO 7904-R7 (dated 12/22/2005).

2.3 Emission Factors: Emission factors for each emission unit at EOF, including the fugitive ROC emission components, can be found in Table 5.1-2.

2.4 Reasonable Worst Case Emission Scenario: Section 5 of the Part 70/APCD PTO 7904-R7 (dated 12/22/2005) defines the operational characteristics that comprise the reasonable worst case-operating scenario for all emission units addressed in this ATC.

2.5 Emission Calculations: This permit action affects previously permitted emissions at the facility. The increase in fugitive emission components associated with this project increases ROC emissions by 14.44 lbs/day. The revised emission information for the facility is presented in detail via Tables 5.1-1, 5.1-2, 5.1-3, 5.1-4, 5.2, 10.2-4 and 10.2-5.

2.6 Special Calculations: There are no special calculations.

2.7 BACT Analyses: Best Available Control Technology is not required for any emission unit in this PTO.

2.8 Enforceable Operational Limits: The permit has provisions limiting total flow rate into the Grace unit and the total heat content of the permeate streams leaving the Grace unit. There is no limit on the quantity of PUC quality gas produced for sale. Fugitive emissions are limited by limiting the total number of fugitive components and requiring inspection and maintenance.

2.9 Monitoring Requirements: Monitoring of the flow rates and heat contents of the gas streams is required. The fugitive components are subject to NSPS and Rule 331 monitoring requirements.

2.10 Recordkeeping and Reporting Requirements: The permit requires that the data which is monitored be recorded and reported to the APCD.

3.0 REGULATORY REVIEW

3.1 List of Applicable Rules: Please see Rules discussions in the Part 70/APCD PTO 7904-R7 (dated 12/22/2005).

3.2 Rules Requiring Review: No special Rules review is required for this permit

3.3 NEI Calculations: The net emission increase calculation is used to determine whether certain requirements must be applied to a project (e.g., offsets, AQIA, PSD BACT). This permit prohibits any increase in the total heat content of permeate gases generated by the Grace Unit, from the levels specified in PTO 7904-R7. Thus, the "I" term for this project is only due to ROC emissions from the fugitive components installed.

As stated before, the additional existing fugitive components that are being added to the permit do not contribute to the NEI. The change in NEI due to this permit action is shown in Tables 10.2-4 and 10.2-5.

4.0 AQIA

The project is not subject to the Air Quality Impact Analysis requirements of Regulation VIII.

5.0 OFFSETS/ERCs

The increase in ROC emissions does not trigger any offsets for this project, since the stationary source ROC NEI remains below the Rule 802 offset thresholds.

6.0 AIR TOXICS

An air toxics health risk assessment is not required for this permitting action. Diesel particulate emissions are the primary drivers of risks at this facility; so the small amount of ROC emissions from this project are not expected to have an impact on the projected risk.

7.0 CEQA / LEAD AGENCY

This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County APCD (revised November 16, 2000). Appendix A (*APCD Projects Exempt from CEQA* and *Equipment or Operations Exempt from CEQA)* provides an exemption specifically for permits to operate. No further action is necessary.

8.0 SCHOOL NOTIFICATION

A school notice pursuant to the requirements of H&SC §42301.6 was not required.

9.0 PUBLIC and AGENCY NOTFICATION PROCESS/ COMMENTS ON DRAFT PERMIT

This project is not subject to public notice. The permittee had a number of comments on the draft permit; these comments and the APCD responses are listed in Attachment A.

10.0 FEE DETERMINATION

Fees for the APCD's work efforts on this permit and all follow-up work associated with this permit are assessed on a fee-reimbursable basis. An 'estimated' fee statement for this permit is included in Attachment F. The Project Code for this permit is 300500.

11.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

AQ Engineer	5/23/8 Date	Engineering Supervisor	5/27/08 Date

ATTACHMENTS

A Response to Venoco Comments
B Fee Statement

PTO 11579 Comments from Venoco, May 13, 2008				
Comment No.	Section No. or Title	Page	Comment	APCD Response
1	2.1 Engineering Analysis, Grace Unit	2 of 5	2nd stage permeate is not a waste gas, it provides heat to incinerate LoCat air.	Accepted: description of the permeate was revised.
2	Equipment Description	2 of 26	Please cite the section of Rule 202 which exempts the Heat Exchanger	Section 202.L.1. cited.
3	Condition C.3.(b)(ii)	8 of 26	Please update the oil fugitive component counts to include ½" non-stainless components.	The oil fugitive component leak path count was updated based on the count from the 2nd half 2007 CVR.

FEE STATEMENT

PTO No. 11579

FID: 00028 Ellwood Onshore Facility / SSID: 01063

Santa Barbara County
Air Pollution Control District

Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
106099	Permeate Tubes - first stage skid - Bank B	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	52.86	0.00
009399	Permeate Tubes - first stage skid - Bank A	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	52.86	0.00
009397	Polishing Filter	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	52.86	0.00
009398	Guard Bed	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	52.86	0.00
106340	Permeate Tubes - first stage skid - Bank C	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009492	Filter Separator	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	52.86	0.00
106100	Coalescing Filter	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
111090	Permeate Tubes - second stage skid	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
111091	Filter Separator	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
111092	Guard Bed	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
111093	Polishing Filter	A1.a	1.000	52.86	Item	No	1	1.000	52.86	0.00	0.00	52.86
009372	Standby Compressors	A2	600.000	27.40	per rated hp	Max	2	1.000	10,612.00	0.00	10,612.00	0.00
	Device Fee Sub-Totals =								**$11,193.46**	**$0.00**	**$10,876.30**	
	Device Fee Total =											**$317.16**

Permit Fee

Fee Based on Devices **317.16**

Fee Statement Grand Total = $317

Notes:

(1) Fee Schedule Items are listed in APCD Rule 210, Fee Schedule "A".

(2) The term "Units" refers to the unit of measure defined in the Fee Schedule.